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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,370	01/23/2002	Hiroki Watanabe	36856.602	6398

7590

08/27/2003

Kcating & Bennett LLP
Suite 312
10400 Eaton Place
Fairfax, VA 22030

EXAMINER

ADDISON, KAREN B

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/052,370	Applicant(s) WATANABE	
	Examiner Karen B Addison	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 15-20 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to show, a surface acoustic wave device provided on a piezoelectric substrate including two balanced signal terminals and an unbalanced signal terminal connected to the external device.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanori (EP961404) in view of Nakamura (6351196).

Masanori discloses a surface acoustic wave apparatus in figs 20,22, 24c, 26 and 27A comprising: a surface acoustic wave device comprising: a longitudinally- coupled resonator having reflectors (14,15) sandwiching at least three interdigital electrodes (fig24c) provided on a piezoelectric substrate (101) and a packaged accommodating the device. Masanori also discloses, two balanced signal terminals (20,46); a multi-layer retaining substrate fig.26 (104,104c) including external terminals (113,116) disposed substantially symmetrical with respect to the central portion of the package via electric

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circuits (113,116). Wherein, the surface acoustic wave device is constructed in such away, that the electrical neutral point is not provided between the balanced signal terminals (20,46). Masanori also discloses, an electrical circuit fig.20 (p2) provided between the layers of the multi-layered substrate. Wherein, the electrical circuit (p2) is located between the balanced signal terminals (20,46) and the external terminals (113,116) to increase the balanced degree between the balanced signal terminals. Masanori also discloses, a die attached portion (fig.26, 27a) electrically /mechanically connected to the electric circuit via holes (417,420) provide in the upper layer of the multi-layered retaining substrate. Masanori do not disclose two balanced signal terminals provided with an input and out put terminals.

Nakamura teaches a surface acoustic wave apparatus in fig.1 comprising: a longitudinally coupled resonator having reflectors (12b and 12c) sandwiching interdigital electrodes (12a) provided on a piezoelectric substrate (11) having two balanced signal terminals provided with an input (IN) and out-put (OUT) for the purpose of improving the balance level in the balance type input and out put terminal. Therefore, it would have been obvious to one having ordinary skill in the arts at the time the invention was made to modify Masanori surface acoustic wave apparatus with the teaching of Nakamura balance signal terminal for the purpose of reducing insertion losses and improving the balance level in the balance type input and output terminal.

3. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanori in view of Nakamura as applied to claim 1-2 and 7-14 above, and further in view of Kaiji(EP735671).

As seen above in paragraph 3, Masanori substantially discloses the claim invention and Nakamura discloses the balance signal terminal having input and output terminals. However, neither Masanori nor Nakamura discloses an adjusting portion for at least one of the balanced signal terminals.

Keiji discloses a surface acoustic wave device in figs. (1,6,7) comprising: a multi-layer substrate having a input and output balance terminals (4) and a adjustor 23(strip lines and reactance) for the purpose of obtaining excellent frequency characteristics.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the surface acoustic wave device of Masanori and Nakamura with the adjustor of keiji to balance the terminal of the surface acoustic wave device.

Response to Arguments

4. Applicant's arguments with respect to claim1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 703-306-5855. The examiner can normally be reached on 8:00 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1317. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KBA
August 23, 2003

Thomas M. Oryherg